15. A method of etching a refractory metal-containing layer and an oxide layer, the method comprising:

(a) etching the refractory metal-containing layer to an end point using a first etchant chemistry at a source power of from about 100 watts to about 450 watts and a bias power of from about 200 watts to about 500 watts, wherein the first etchant chemistry comprises a chlorine source and a fluorine source; and

(b) etching partially through the oxide layer using a second etchant chemistry, wherein the second etchant chemistry is free of fluorine and comprises a chlorine source.

31. A method of etching a semiconductor device using a capacitive coupling plasma reactor to form a pattern on the semiconductor device, comprising:

(a) providing a semiconductor device having a plurality of layers, at least one of the layers of the semiconductor device comprising a refractory metal-containing material; and

(b) etching the semiconductor device with an etchant composition at a bias power of from about 100 watts to about 750 watts, wherein the etchant composition comprises a first etchant chemistry comprising chlorine and a second etchant chemistry free of fluorine.

REMARKS

Applicant has amended the independent claims herein to specify that the etching conditions vary significantly between the first and second etching chemistry. Thus, the first etchant comprises a chlorine source, and the second etchant chemistry is characterized by an absence of fluorine. This amendment is supported, *inter alia*, by the specification at page 7, line 17 - page 8, line 16, wherein it is first disclosed that the first etchant comprises a source of chlorine, page 7, line 17 - page 8, line 10, and then discloses that in the second etchant, fluorine is not included. The specification specifically teaches that it is believed that the addition of fluorine results in a low oxide selectivity, a requirement of the invention.